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Rural Development Opportunities in Special Forest Products

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Cooperative Forestry
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EXPERIMENT STATION

Table of Contents

Subject	Page
Introduction	1
Background	1
Purpose	1
Audience	2
Partners	2
Categories of Special Forest Products	3
Concerns	9
Topics	11
Activities	12
References	13
Appendix-Categories of Special Forest Products	14

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Introduction

Products from the forest, a renewable natural resource, provide valuable opportunities for creating jobs, strengthening the economy and improving the quality of life in many rural American communities. There are numerous examples of successfully established entrepreneurial activities over the years utilizing the products of the forests. Some of these go back to the settling of America. Most of us are familiar with the large, multi-national sawmills and pulp and paper mills. However, few know of the other opportunities available from the forests. It is no wonder, since most of our attention has been directed to the management and utilization of timber, while the other products and services from the forests have been largely ignored. Ironically, many of these lesser forest products were utilized by Native Americans. Just as important as the woodlands are for timber and pulp, these lesser known forest products provide income opportunities as well.

Background

How can an individual or a community use its renewable natural resources to generate more jobs and put more dollars in circulation? Forestry and forest products is the fourth most important sector in the economy of the United States. Currently 6 percent of the U.S. GNP is associated with forest products. Our forest products industry has been operating in this country for over 350 years and is still vigorous, in spite of physical and economic hardships, including competition, substitute materials and withdrawals of timberland from harvesting.

What are the alternatives to sawn lumber? What other choices are there, when a sawmill shuts down for lack of timber or markets? What employment opportunities might be available to a community adjacent to a forest that has been overcut, severely burned or withdrawn from harvesting of traditional forest products? There are other options! Our Nation's woodlands contain an enormous variety of special products. For our purposes, we have listed 26 major categories of special forest products in the Appendix. These range from animal bedding and cooking greens to medicinal materials and smokewood. Recreation, fish and wildlife are products and services of the forests. New businesses and industries can be established from these special forest products and most, if not all, may be started with a minimum of capital investment.

Purpose

This "paper" identifies some of the lesser known forest products, which we have chosen to call "special forest products" and highlights some of the activities that may facilitate the creation or expansion of jobs and income in rural America. These products also assist in obtaining self-sufficiency by providing food, shelter, clothes and adding to the quality of life. It is our hope that programs will be implemented to assist woodland owners, users of the forests, community planners and leaders in rural development to take advantage of the numerous opportunities that currently are going unnoticed. We hope this paper will stimulate action to initiate such programs!

Audience

Thus, the purpose of this paper is to highlight, for various audiences, some opportunities in rural development involving special forest products. These audiences include:

- Rural Development Committees
- Chambers of Commerce
- Industrial Development Agencies
- Banking and business groups
- Woodland owners
- Land managers
- Entrepreneurs
- Venture capitalists
- Woodland users
- Harvesters, producers, brokers, marketers and buyers
- Consumers
- Federal, state and local governmental institutions that provide financial, educational and technical assistance.
- Individuals and agencies concerned with: access, allocation, effect, regulation and research of special forest products
- Professional/Technical/Industrial and Trade Associations and Organizations representing special forest products

Partners

The most effective way to implement this opportunity is to combine the resources of federal, state and local government, academia and the private sector. Many of the same organizations listed as an audience could also be partners. Other anticipated partners include:

- USDA
    - Forest Service (National Forest Systems, Research and State and Private Forestry)
    - Resource Conservation & Development Areas
    - Rural Enterprise Teams
    - Food and Agriculture Councils
    - Cooperative Extension System
    - Soil Conservation Service
- State Forestry Agencies
- State Economic Development Agencies
- State and Private Colleges and Universities
- USDI
    - Bureau of Land Management
    - Bureau of Indian Affairs
    - Fish & Wildlife Service
    - Park Service
- Private Sector
    - Landowners
    - Wood Using Industries
    - Consultants
    - Cottage Industries
    - Specialty Manufacturers
    - Craft Guilds
- National Association of Conservation Districts

Categories of Special Forest Products

Twenty six major categories of special forest products are listed in the Appendix. Examples of products and/or species are provided in most categories. Some products are unique to a species, while in other cases many different species may be used for a particular product. One species or product may be listed under several categories. Others might have an edible category, which could include: berries, cooking greens, herbs and spices, honey, mushrooms, nuts and syrup. Many herbs and spices are also medicinal materials. However, the categories and lists illustrate the enormous number and diversity of products that may be obtained from the forest. These special products, in turn, provide some unique opportunities for rural America.

A. Animal Bedding

Dairy farms, poultry farms, stables, kennels or really anyone that raises animals require animal bedding material. Chips, sawdust and shavings often considered a residue and having a negative value (cost) meet this need.

B. Aromatics

Many forest trees and shrubs contain aromatic oils, resins, acids and gums. They are either collected as exudates or are extracted from stumps, roots, bark, trunkwood, foliage, seeds and fruits. Some of the products include: adhesives, paints, varnishes, soaps, plastics, perfumes, pharmaceuticals, insecticides and polishes for wood and leather.

C. Basketmaking and Chair Caning

Beargrass and black ash are the preferred species for obtaining strips for woven baskets. Bark baskets are made from paper birch bark. Techniques similar to those used in weaving baskets are also used with willow branches, canes and split white oak strips for making chair seats, backs and frames.

D. Berries

Wild fruits and berries are commonly picked for jams, jellies and preserves. This seasonal business has traditionally supplemented many family incomes, while requiring a minimal capital investment in processing equipment.

E. Charcoal

Industrial markets for charcoal have declined. However, residential use of charcoal for cookouts and by restaurants has increased. Dense hardwoods such as hickory, oak, maple, beech and birch are the preferred species for producing charcoal.

F. Cooking Greens

A number of forest plants provide edible greens that are both tasty and nutritious.

G. Cones

Cones from evergreen trees can be collected for both a source of seed or as decorative material. As the latter, they are used individually, made into cone wreaths or to compliment floral arrangements. The source of cones is limited only by the species growing in a particular area.

H. Cosmetics

Many cosmetics in the form of facial creams, shampoos, hair rinses, salves and lip balms are made from herbs and spices.

I. Decorative Floral Greenery

A whole host of floral items, and not just greens (moss and stems), are used by homeowners, florists and decorators. These include boughs, greens, wreaths, sprays and garlands. Some of these items are seasonal, while others are in demand year-around.

J. Decorative Wood

Many species of woods have decorative appeal due to their color, grain, and form. Slabs, crossections, crotchwood, roots, driftwood and woods modified by fungus and insects, such as burls and diamonds, are appealing.

K. Dye Stock and Tanning Materials

Tannin extracts from hemlock, oak and other bark from forest trees have long been used in tanning leather. Roots and plant material also provide dye stock.

L. Herbs and Spices

Numerous plants have been credited with medicinal properties and have become pharmaceutical products. Botanicals that provide these products range from common weeds to popular wild flowers to important forest products. The herb and spice market in the U.S. is rapidly expanding. The market includes foods, pharmaceuticals, cosmetics, and florals.

M. Honey

The production of woodland honey is an activity which can be very profitable. Honey varies substantially in aroma and flavor depending upon the flowers from which the pollen is taken, the weather and the soil. Some of the more sought after flavors include honey made from the nectar of basswood, sourwood, ceanothus, gallberry, manzanita, mesquite and tupelo.

N. Medicinal Materials

The forests of America contain numerous plants and trees having medicinal properties. The markets for the products are often very limited. The portion of the plants or trees containing medicinal materials include: bark, buds, bulbs, flowers, gum, leaves, oil and roots.

O. Mushrooms

For centuries mushrooms have been used as a staple food by some and a gourmet's delicacy by others. Mushrooms are used in breads, casseroles, cookies, garnishes, gravies, hors d'oeuvres, omelettes, relishes, salads, sauces, soups, as a vegetable, or pickled, candied and as a main dish.

P. Naval Stores

Naval stores is a term applied to the products obtained from the oleoresin, or gum, of several southern yellow pines. The most important products are rosin and turpentine and the most important sources are longleaf and slash pine.

Q. Nuts

Millions of pounds of edible nuts are sold each year from the forests of this Nation. Nuts are also used in industrial applications, such as walnut flour used as an abrasive polish, a glue extender and packing material in oil well casings. Demand for some nuts is seasonal, and others have a limited regional market. Nuts are also collected for a source of seed.

R. Ornamental Plants, Trees and Shrubs

Most homes use some form of vegetation for landscaping or other decorative purposes. Many native trees and shrubs can be used just as they come from the forest. Others are often taken as seedlings, and then planted in a nursery bed and sold later as transplants.

S. Pitchwood, Stumpwood or Fatwood

Old-growth stumps of several species are removed from the earth, ground into particles, and extracted with a solvent producing terpenes, pine oil and rosin. Due to the high pitch content, stumpwood can also be processed into fire starters or kindling wood.

T. Recreation

Americans love to recreate in the out-of-doors. The opportunity and variety of activities are as varied as the individuals participating. As urban populations increase, the demands on the limited public and private lands available for outdoor recreation will also increase.

U. Seeds, Seedlings and Cuttings

From 1988 to 2010, the U.S. is projected to loose 16 million acres of forestland, or 700,000 acres per year. There are approximately 214 million acres, 165 million acres in cropland and 49 million acres in pastureland, that could be planted. There is a tremendous opportunity in providing seeds, seedlings and cuttings in order to effectively carry out this huge reforestation effort.

V. Smokewood or Flavor Wood

Wood smoke from an outdoor fireplace lends a special flavor to the food. Wood chips are used as a flavor supplement with charcoal when barbecuing. Flavor woods are used by the meatpacking and fishing industries in the curing of meats and fish.

W. Soil Conditioners and Amendments

Forest residues, peat and moss are used to improve plants and soils, either as a mulch or by mixing into the soil. Chips also are used for composting sewage sludge, which under proper conditions can be used as a soil amendment. Uses are primarily around trees and shrubs and in lawns, flower beds and vegetable gardens.

X. Specialty Wood Products

Usually when one refers to the forest products industry, one thinks of sawmills, veneer mills, plywood/waferboard plants and pulp and paper mills using large quantities of wood as their feedstock. Many small wooden items can be produced in small shops, or even home workshops. Many use small pieces of wood, which are the products of forest thinnings, improvement cuts and what normally has been considered as mill and forest residue.

Y. Syrup

Springtime comes to the Northeast and the Lake States, when the sap runs in the "sugar bushes". Maple sap is collected and processed into syrup and sugar. To a lesser degree, birch syrup is also produced.

Z. Wildlife

Just as in recreation, the demands for fishing and hunting, photography and observing fish, fowl and game will likewise increase. However, many of these wildlife opportunities are becoming more dependent upon privately owned lands rather than public lands. Therein lies an opportunity.

Concerns

The unique nature of special forest products, where, and how they grow and the people associated with them, both producers and users alike, generate some concerns. Many of these concerns are topics that should be addressed in an informational and educational effort.

Depletion of resource or disruption of biotic balance. Just as with any renewable resource, one must determine the carrying capacity of each particular special forest product. How is sustained yield determined, and what management practices will ensure that the resource will not be depleted?

Conflict between user groups. Several different user groups may be vying for the same product but with entirely different motives or end uses in mind.

Competition. Competition is the byword of our free enterprise system. However, competition can be brutal to many small, fledgling enterprises, if it has not been properly addressed.

Decentralization and unorganized nature of users and buyers. Attempting to reach each audience individually or collectively, or to bring the two audiences together, may be difficult.

Lack of "wood's sense" or attention to personal and public safety. Many of the gatherers of special forest products may not possess adequate experience or training and subsequently increase the chances of personal injury, becoming lost, or starting a forest fire.

Public health. Gatherers may not be in adequate physical condition often demanded by the harvesting of some special forest products. With the edible forest products, one also risks the hazard of not knowing, for example, the difference between edible and poisonous mushrooms. Processing of edible forest products could introduce health hazards, due to possible unsanitary conditions resulting in botulism, etc.

Language and cultural differences. Due to the nature of special forest products and how and where they grow, some of the gatherers, producers and users of special forest products may be transients, itinerants or of another nationality.

Access and trespass. Whether the special forest products grow on public or private land, proper procedures must be followed to ensure legal access and authority to conduct business.

Private gain without compensation. Proper safeguards and procedures must be considered to ensure that compensation is granted for the harvesting of special forest products and that theft, poaching and vandalism do not occur.

Environmental protection. The harvesting and processing of special forest products must be conducted to ensure that there is no soil, water or air pollution.

Topics

Besides the concerns Just noted in the previous section of this paper, other topics that should be addressed, when considering special forest products as an economic opportunity, include:

Resource. Define the character, quality, volume, distribution and availability of the resource.

Labor. Identify the type, availability, skills, training needs, while considering the seasonal nature and cultural differences, of the labor pool.

Process. Discuss the means, equipment and facilities for harvesting, processing and transporting the resource.

Market. Identify product end use, its marketing and sales, to include: distribution channels, advertising, pricing, packaging and merchandising.

Assistance. Discuss sources and availability of public funding and technical assistance, as well as sources of commercial finance and credit.

Law. Discuss all the rules and regulations regarding environmental impact statements, inspections, leases, liability, licenses, permits, policy, quarantines, restrictions, safety (OSHA), sanitation, social security (FICA), taxation, workman's compensation and zoning.

Quality Control. Quality control could be considered part of processing, but due to its importance in producing a marketable product, it warrants special mention.

Business Plan. The Business Plan pulls it all together and is essential in initiating and succeeding in any commercial venture.

Research. Voids will exist where there are no answers to important questions. The researchable needs must be articulated to those people and institutions, who are in a position to address them.

Balance. A balanced program must address attracting new industries as well as expanding existing ones.

Awareness. All those involved in any way with special forest products must be made aware of the opportunities they provide in rural development and economic diversity.

Activities

Any number of activities can be conducted to take advantage of the opportunities provided by special forest products. These include:

Publications, such as booklets, pamphlets and brochures featuring the "how to" aspects of harvesting, processing and marketing of special forest products.

Videos, much the same as publications, but also featuring some successful enterprises. They are also excellent in providing instruction and training.

Newsletters would be targeted to special audiences, such as gatherers, and users, etc. They would provide a media for sharing ideas and expertise.

Workshops with published proceedings would be targeted to specific audiences and products and would be conducted regionally. The topics featured in the workshops would be those addressed in this paper.

Field trips and demonstrations would include visits to appropriate forest sites, processing facilities and sales outlets.

Exhibitions could be sponsored individually or in conjunction with a workshop. This is where special forest products would be displayed, in order to expose the producers and sales people to the varied and numerous markets and products.

Technical assistance, provided one-on-one, is the most effective means to encourage, facilitate and implement special forest products technology. All audiences and topics featured in this paper would be the benefactors of this technical assistance.

Computer Software assisting in all areas of inventory, harvesting, processing, marketing and training.

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Appendix

Categories of Special Forest Products

A. Animal Bedding
B. Aromatics
C. Basketmaking and Chair Caning
D. Berries
E. Charcoal
F. Cooking Greens
G. Cones
H. Cosmetics
I. Decorative Floral Greenery
J. Decorative Wood
K. Dye Stock and Tanning Materials
L. Herbs and Spices
M. Honey
N. Medicinal Materials
O. Mushrooms
P. Naval Stores
Q. Nuts
R. Ornamental Plants, Trees and Shrubs
S. Pitchwood, Stumpwood or Fatwood
T. Recreation
U. Seeds, Seedlings and Cuttings
V. Smokewood or Flavor Wood
W. Soil Conditioners and Amendments
X. Specialty Wood Products
Y. Syrup
Z. Wildlife

A. Animal Bedding

Chips
Sawdust
Shavings

B. Aromatics

Balsam gum and needles
Birch oil
Cedar oil and gum
Hemlock oil
Pine oil
Sassafras oil
Spruce oil
Storax gum from Sweetgum
Walnut oil
Wintergreen oil
Witch hazel

C. Basketmaking and Chair Caning

Beargrass
Black or brown ash
White birch bark
White oak
Willow

D. Berries

Blackberry
Blackcap
Blueberry
Blue elderberry
Chokecherry
Crabapple
Cranberry
Currants
Elderberry
Huckleberry
Juneberry
Lingonberry
Mulberry
Oregon grape
Paw Paw
Persimmon
Plum
Raspberry
Salal
Salmonberry
Serviceberry
Thimbleberry

E. Charcoal

F. Cooking Greens

Dandelion shoots and leaves
Fern shoots
Nettle shoots
Oxalis leaves
Salmonberry shoots
Sheep sorrel

G. Cones

H. Cosmetics

I. Decorative Floral Greenery

Agave stars
Bear grass
Bittersweet
Blueberry or Rocky Mountain juniper
Brittlebrush
Cattails
Cedars, particularly Port-Orford
Chapparal stems
Club moss (Lycopodium)
Creosote stems
Dogwood
Douglas fir
Evergreen huckleberry
Galax
Gopherwood
Holly
Leucothoe
Magnolia
Manzanita
Mountain laurel
Mistletoe
Ocotillo stems
Oregon boxwood
Oregon grape
Pachistima
Palmetto
Princess pine (Chamaphila umbellata)
Pussy willow
Rhododendrum
Salal (large, papoose, lemon leaf)
Scotch broom
Silver tip
Smilax
Spaghnum moss
Spanish moss
Sumac
Sword and long fern
Teasel
True firs
Wax myrtle
White birch bark
Yew

J. Decorative Wood

Bigleaf maple
Cypress knees
Diamond willow
Hazel whips
Juniper
Madrone
Manzanita
Mountain mahogany
Oregon ash
Oregon myrtle
Pecky cypress
Redshank
Redwood burls
Sitka spruce roots
Walnut crotches
Wormy chestnut
Yew

K. Dye Stock and Tanning Materials

Alder bark
California poppy roots
Douglas fir
Hemlock
Lichens
Oak wood and bark
Oregon grape roots
Tanoak
Wild geranium
Yellowbark roots

L. Herbs and Spices

Aspen leaves (cough preparation)
Baby's breath (Gypsophila paniculata)
Basil
Bay leaves (laurel)
Blueberry leaves
Catnip (tea)
Celery seed
Chervil
Chicory root (coffee substitute)
Dill herb and seed
Horesetail (silica)
Laborador tea
Marjoram
Mint
Mullein (Verbascum thapsus)
Oregano
Pineapple weed (chamomite)

L. Herbs and Spices (cont')

Princess pine (Chimaphila umbellata)
Raspberry (Rubus)
Rose leaves and hips (vitamin C)
Rosemary
Sage (Salvia officinalis)
Savory
St. John's wort (hypericum red dye)
Tarragon
Thistle (vermouth flavoring)
Thyme
Yerba santa (expectorant and flavoring)

M. Honey

N. Medicinal Materials

Althea
Balm of Gilead buds (Populus balsamifera)
Balsam gum
Birch oil (astringent, vinegar, beer)
Biscuit root
Bitteroot (cardiotonic)
Black cherry bark (flavoring and expectorant)
Black haw roots (Viburnum)
Bloodroot (Sanguinaria canadensis)
Boneset (Eupatorium perfoliatum)
Calamus root (carcinogenic oil)
Camas bulbs
Cascara bark (laxative)
Cattail flowers and root starch
Cohosh (Cimicifuga racemosa)
Dandelion root
Dill oil
False hellibore roots (heart drug)
Foxglove leaves (digitalis, cardiac stimulant and diuretic)
Gingseng root (Panax quinquefolium)
Goldenseal (Hydrastis canadensis)
Henbane
Indian breadroot
Jerusalem oak seed (chenopodium oil)
Jimsonweed leaves (stramonium for asthma)
Lady slipper root (sedative)
May-apple or mandrake roots (cathartic)
Oregon grape roots (drug, food coloring and dye)
Oregon tea
Princess pine or pepsissewa (medicine and soft drinks)
Quinine conks (Fomes laricis)
Sassafras oil and root
Scotch broom
Skunkcabbage roots

N. Medicanal Materials (cont')

Snakeroot (seneca for snakebite)
Spruce gum
Storax gum from Sweetgum (expectorant)
Sumac (Rhus glabra)
Western yew (taxol for cancer)
Wild garlic
Wild ginger (Asarum canadense)
Wild mint
Wild onion
Wintergreen oil (Gaultheria procumbens)
Witch hazel bark and leaves (astringent)
Yellow dock root (Rumex crispus)

O. Mushrooms

Agaricus
Armillaria
Boletes
Chantarelles
Clavaria
Craterellus
Fistulina
Hedgehog (Dentinum repandum)
Lactarius
Lepiota
Lions mane
Lyophyllum
Matsutake (Armillaria caligata)
Morels (Morchella)
Oregon white truffles
Pleurotus
Polyporus
Puffballs
Rozites
Russula
Shiitake
Sparassis
Sweet tooth
Verpa

P. Naval Stores

Longleaf pine
Slash pine

Q. Nuts

Beechnut
Butternut
Chestnut
Golden chinquapin
Hazel nut
Hickory
Pecan
Persimmon
Pinyon pine
Walnut

R. Ornamental Plants, Trees and Shrubs

Azaleas
Bayberry
Bearberries
Camellias
Euonymus
Ferns
Fringetree
Goldenchain
Hawthorn
Holly
Magnolia
Madrone
Mountain laurel
Mulberry
Myrtle
Nannyberry
Oregon boxwood
Redbud
Rhododendrums
Sedum
Serviceberry
Spicebush
Viburnum
Winterberry

S. Pitchwood, Stumpwood or Fatwood

Douglas fir
Longleaf pine
Ponderosa pine
Slash pine
White pine

T. Recreation

Archery
Bed and breakfast
Boat and dock rental
Boating
Cabin sites
Camping sites
Farms and ranches
Guiding
Horse rental
Nature areas and trails
Orienteering
Outfitting
Photography
Picnic sites
Sightseeing
Skiing and sledding
Swimming
Target, trap and skeet shooting
Water skiing

U. Seeds, Seedlings and Cuttings

V. Smokewood or Flavor Woods

Alder
Apple
Bigleaf maple
Cherry
Hickory
Madrone
Mesquite
Oak
Sugar maple
Tanoak
Vine maple

W. Soil Conditioners and Amendments

Bark
Chips
Leaves
Moss
Peat
Pine Straw
Sawdust
Shavings

X. Specialty Wood Products

Almond knockers (Douglas-fir and pondersoa pine)
Apiary supplies (frames, hives and foundations)
Arrows (Port Orford cedar)
Baseball bats
Bean shooters (elderberry)
Birdhouses
Blocking, bracing and planking
Bow staves (yew)
Bowls
Boxes and crates
Candlesticks
Carvings
Chips
Christmas trees
Craft wood
Dimension stock
Dowels and turnings
Excelsior
Fencing
Firewood
Floats
Flooring
Framing stock
Furniture
Game calls
Gunstocks
House logs
Lamps
Lathing and slats
Local use lumber
Millwork
Paddles and oars
Pallets
Paneling
Planters
Plaques
Posts, props and poles
- Bean
- Construction
- Fence
- Fishing (willow)
- Hop
- Pike
- Plug (alder)
- Pruning
- Tent
- Utility

X. Specialty Wood Products (cont')

- Reels and spools
  - Cable
  - Fishnet
  - Wire
- Rollers
  - Pastry
  - Towel
  - Window shade
- Rulers and yardsticks
- Shakes
- Shingles
- Signs
- Skis
- Slingshot crotches (vine maple)
- Snowshoes
- Stakes
  - Grape
  - Surveyor
  - Tobacco
  - Tomato
- Toys, curios and novelties
- Traps
- Trays
- Trellises
- Walking sticks
- Wedges

Y. Syrup

- Sugar maple
- White birch

Z. Wildlife

- Bait and equipment sales
- Birdwatching and sightseeing
- Blinds
- Boat and dock rental
- Fish and game processing
- Fishing
- Guiding
- Habitat improvement
- Hunting preserves
- Photography
- Raising fish and game
- Training, boarding and leasing dogs
- Trapping